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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,363	10/17/2001	Shu Lin Tai		7772

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WEI TE CHUNG  
FOXCONN INTERNATIONAL, INC.  
1650 MEMOREX DRIVE  
SANTA CLARA, CA 95050

EXAMINER

TRAN, DZUNG D

ART UNIT PAPER NUMBER

2633

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/982,363

Applicant(s)

TAI, SHU LIN

Examiner

Dzung D Tran

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-16 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Specification***

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pan US patent no. 6,249,625 in view of Li US patent no. 6,477,289.

Regarding claims 1, 8 and 17, Pan discloses in figure 4A an optical add-drop multiplexer comprising:

a first ferrule 38 with an input optical fiber 40 and an output optical fiber 41 stationed therein;

a first graded index (GRIN) lens 46;

a bandpass filter 47 having a particular central wavelength;

a second graded index lens 48;

a second ferrule 49 having an adding optical fiber 43 and an dropping optical fiber 42 stationed therein;

wherein the first graded index lens 46, the bandpass filter 47 and the second graded index lens 48 are successively placed between the first 38 and the second ferrules 49, an optical multiplexed signal from the input optical fiber is transmitted to the bandpass filter (col. 4, line 51), from which an optical signal having a wavelength

identical to the central wavelength of the bandpass filter is output to the dropping optical fiber, and other optical signals having other wavelengths are coupled with an optical signal from the adding optical fiber having a wavelength identical to the central wavelength of the bandpass filter and are transmitted to the output optical fiber (col. 7, lines 9-51). Pan differs from claim 1 of the invention in that Pan does not disclose an optical crystal. Li, from the same field of endeavor, discloses an add/drop multiplexing having a refractive element 102 (same as optical crystal) (col. 7, line 31). Since a refractive element 102 of Li does the same function as claimed optical crystal that is for redirect the filtered signal and for achieve a signal switching function (col. 3, lines 60-61). At the time of the invention was made, it would have been obvious to an artisan at the time of the invention was made to include the teaching of Li in the apparatus of Pan in order to provide for the separation of the wavelengths carried in an optical fiber in a straightforward spatially compact, optical efficient, and low cost system.

For claim 8, Pan discloses bandpass filter 47 is a wavelength dependent filter (col. 5, line 22-23) that is the bandpass filter 47 capable to pass any selective wavelength from the WDM signal. For claim 17, Li clearly shown in figure 5, a refractive element 102 (same as optical crystal) (col. 7, line 31) positioned between the first GRIN lens and second GRIN lens.

Regarding claim 2, Li further disclose bandpass filter is a thin-film filter (col. 6, lines 10-14).

Regarding claims 3 and 4, Li shown in figure 5, the bandpass filter 118 is attached on the first graded index lens 108.

Regarding claims 5 and 6, Li discloses in figure 5, a refractive element 102 is a pentagon. However, whether to use a refractive element as a pentagon or a hexagon or an egg-timer shaped hexagon is merely an engineering design choice that is for redirect the filtered signal and for achieve a signal switching function (col. 3, line 55 to col. 4, line 2).

Regarding claim 7, Pan shown in figure 4B, the first 62 and the second ferrules 68 each define two holes with two optical fibers respectively stationed therein.

3. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pan US patent no. 6,249,625 in view of Li US patent no. 6,477,289 and further in view of Chang et al US patent no. 6,792,211.

Regarding claim 18, as per claims above Pan and Li disclose all the limitation except for wherein more than one units are assembled sequentially one another, and wherein the first output fiber of one unit is connected to the first input fiber of the next unit, and the second output fiber of said one unit is connected to the second input fiber of the said next unit. Chang, from the same field of endeavor, discloses a compact optical wavelength add/drop multiplexer having more than one units are assembled sequentially one another, and wherein the first output fiber of one unit is connected to the first input fiber of the next unit, and the second output fiber of said one unit is connected to the second input fiber of the said next units (see figures 3A, 3B). At the time of the invention was made, it would have been obvious to an artisan at the time of the invention was made to include the teaching of Chang in the combination of Pan

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and Li. One of ordinary skill in the art would have been motivated to do this in order to provide a simpler and more reliable system for optical add/drop multiplexing in a fiber optic (col. 1, lines 65-67).

Regarding claim 19, Chang further discloses the filter of each unit defines its own center wavelength different from those of other units (col. 3, lines 39-59).

Regarding claim 20, Chang shown in figures 3A and 3B, the first input fiber 33A and the second input fiber 36A of the first unit 31A, and the first output fiber 34B and the second output fiber 35B of the last unit 31B are communicative with an exterior.

4. Claims 9-16 are allowed.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Hallock et al. U.S. patent no. 6,792,210. Hybrid optical add/drop multiplexing device

b. Tai U.S. patent no. 6,804,432. Optical add/drop multiplexer

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DT  
10/15/2004



JASON CHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600